

IN THE SPECIFICATION:

Please replace the paragraph at page 14, lines 5-8 with the following paragraph:

--The parameter  $\mu$  is a complex constant related to the gamma function  $\Gamma(\cdot)$ . It is noted that no coordinate scaling is necessary to estimate the form of the Fourier transform. In fact the Fourier phase  $[[\phi]]$  is essentially the same as the spatial phase  $[[\theta]]$ , except for a sign reversal in the radial component. This can be seen from the following:--

Please replace the paragraph at page 15, lines 1-2 with the following paragraph:

$$\begin{aligned} &--h(x,y) = [p(x,y) + g_{n1}(x,y)]\Theta_{g_{ntk}}(x,y) \\ &= [p(x,y)\Theta_{g_{ntk}}(x,y)] + [g_{ntk}(x,y)\Theta_{g_{ntk}g_{n1}}(x,y)] \end{aligned} \quad (33)$$

Please replace the paragraph at page 16, line 3 with the following paragraph:

$$\begin{aligned} &h_{mkmk}(x,y) \propto r^{2(p+1)}, p \neq -1 \\ &h_{mkmk}(x,y) \propto \delta(x,y), p = -1 \quad \text{-----} \quad (38) \\ &\underline{h_{mkmk}(x,y) \propto \delta(x,y), p = 2} \\ &\quad \underline{\pi - \ln(r), p = -1} \\ &\quad \underline{r^{2p+2}, p \neq 2, p \neq -1} \quad (38) \end{aligned}$$

Please replace the paragraph at page 22, lines 16-19 with the following paragraph:

--The watermark encodes information in the centre location  $(x_n, y_n)$ , strength, relative phase, and parameters  $k(n)$  and  $\alpha_{m(n)}$  of each of the N basis patterns  $\hat{g}$ . In practice the centre location  $(x_n, y_n)$  strength is not a robust carrier of information, as it can be easily

attenuated, even accidentally, by any processing of the watermarked image.--

Please replace the paragraph at page 29, lines 14-19 with the following paragraph:

--As stated above, the watermark encodes information in the centre location  $(x_n, y_n)$ , strength, phase, and parameters  $k(n)$  and  $\alpha_{m(n)}$  of each of the  $N$  basis patterns  $\hat{g}$ . For example, the location  $(x_n, y_n)$  of each peak could store several bits of data. More sophisticated methods may also be used such as described below. Detection of the stored data requires that the peak and its position be identified reliably. This process may entail some error correcting or data redundancy scheme.--

Please replace the paragraph at page 30, lines 8-10 with the following paragraph:

--This technique uses three points on a regular grid to provide information on the pattern orientation and scaling, a point to encode ~~image~~ message length, and subsequent points to encode bits of information.--

Please replace the paragraph at page 32, lines 9-12 with the following paragraph:

--Each watermarking basis pattern  $\hat{g}$  is orthogonal to all other bases having different parameters  $k$  and  $\alpha_m$ . Thus, if many different ~~bases~~ basis patterns  $\hat{g}$  are used in the watermark, a peak for each basis may be recovered almost independently of all other ~~bases~~ basis patterns  $\hat{g}$ .--